Appendix 3

Compilation of ASTM Standard Definitions

ASTM 6th Edition 1986

* **lint content,** *n*—that portion of a mass of cotton fiber consisting of fiber, including normal moisture content, but excluding foreign matter. D 123, D 2812; D-13

* **lint cotton,** *n*—loose cotton fibers in any form, either raw or processed, free of seeds and bound together in yarn or fabric. D 123, D 2495; D-13

* **linters**—the short fibrous material adhering to cotton seed after the ginning operation. After removal from the seed it is used to a limited extent as a fibrous raw material for special papers. The principal use, however, is for chemical cellulose, that is, as the raw material for the manufacture of cellulose derivatives. D 1695, D-23

* **linters,** *n*—the short fibrous material adhering to the cotton seed after the spinnable lint has been removed by ginning and which is subsequently recovered from the seed by a process called "delinting." D 123, D-13

* *lint, ginned*—See **ginned lint.** D 123, D-13

lip—the inner face of the lip of a flange on a lock-strip gasket. C 716, C 542; C-24

lip and rim area—that part of a drinking vessel which extends 20 mm below the rim on the outside of the specimen. C 927, C-14

lip pressure—the pressure exerted by the lip of a lock-strip gasket on material installed in the channel, when the lock-strip is in place. C 716, C 542; C-24

lip seal pressure—the lip pressure required to effect a seal against the passage of water and air. C 542, C-24

liquefaction—the process of transforming unstable soil from a solid state to a liquid state, usually as a result of increased pore pressure and reduced shearing resistance. D 653, D-18

* **liquefaction (spontaneous liquefaction)**—the sudden large decrease of the shearing resistance of a cohesionless soil. It is caused by a collapse of the structure by shock or other type of strain and is associated with a sudden but temporary increase of the porefluid pressure. It involves a temporary transformation of the material into a liquid mass. D 653, D-18

* **liquid**—(flammability regulations) a substance that has a definite volume but no definite form, except such given by its container. It has a viscosity of 1×10^{-3} to 1×10^{3} St (1×10^{-7} to 1×10^{-1} $m^2 s^{-1}$) at 104°F (40°C) or an equivalent viscosity at agreed upon temperature. (This does not include powders and granular materials.) Liquids are divided into two classes:

Class A, low viscosity—a liquid having a viscosity of 1×10^{-3} to 25.00 St (1×10^{-7} to 25.00×10^{-4} $m^2 s^{-1}$) at 104°F (40°C) or an equivalent viscosity at an agreed upon temperature.

Class B, high viscosity—a liquid having a viscosity of 25.01 to 1×10^{3} St (25.01×10^{-4} to 1×10^{-1} $m^2 s^{-1}$) at 104°F (40°C) or an equivalent viscosity at an agreed upon temperature. D 16, D-1

* **liquid bituminous material**—one having a definite volume but no definite form, except as provided by its container. It has a viscosity of 0.1 to 1×10^{5} cSt (mm^2/s) at 40°C. This does not include powders or granular materials. D 1079, D-8

* **liquid development**—development by means of a toner dispersed in an organic liquid carrier. F 335, F-5

* **liquid impingement**—impingement by liquid particles. G 40, G-2

* *liquid impingement damage*—See **damage.** G 40, G-2

* **liquid impingement erosion**—progressive loss of original material from a solid surface due to continued exposure to impacts by liquid drops or jets. G 40, G-2

* **liquid-in-glass thermometer**—a temperature-measuring instrument whose indications are based onet on material installed in the channel, when the lock-strip is in place. C 716, C 542; C-24

* **liquid jet**—a body of liquid projected into motion, usually of approximately cylindrical shape, such as could be produced by discharging the liquid through an orifice. In liquid impingement testing two kinds of liquid jet are used:

(*1*) *continuous jet*—a continuous flow of liquid in the form of a jet.

(*2*) *slug, or jet segment*—a body of liquid projected into motion, in the form approximately of a finite cylinder whose length is usually no more than several times its diameter and which moves in a direction approximately parallel to its length. G 40, G-2

liquid limit (*LL*)—the water content, in percent, of a soil at the arbitrarily defined boundary between the liquid and plastic states. This

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Johnnie R. Roberts et al.

Application No.: 09/916611 Confirmation No.: 8709

Filed: January 25, 2006 Art Unit: 1616

For: MANUFACTURE AND USE OF A HERBICIDE FORMULATION Examiner: A. N. Pryor

37 CFR 1.132 DECLARATION

1. I am one of the inventors of the above referenced application. I am employed by Helena Chemical Company as a Manager of the Product Development Laboratory in Memphis, Tennessee. A copy of my most recent Curriculum Vitae is attached as Appendix A. In view of the above qualifications, I consider myself an expert in the field of agricultural compositions.

2. I have reviewed the office action which was mailed on November 30, 2004. The examiner has rejected the claims based on composition of AF-300. I have also reviewed and am familiar with AF-300 along with the above identified application.

3. The composition of AF-300 is found on their Material Safety Data Sheet ("MSDS"). MSDS sheet, dated January 2002 (see Appendix 1).

This MSDS sheet shows the following composition:

2,4-Dichlorophenoxy acetic acid at 300 grams per liter
Synthetic ethoxylated alcohol at 50%
Solvent 400 at 235 grams per liter.

4. According to the MSDS sheet for AF-300, Solvent 400 is kerosene. According to the online chemical reference at http://chem.sis.nlm.nih.gov/chemidplus the CAS number used on the AF-300 MSDS sheet (68439-46-3) is also known as Neodol 91-6. (See Appendix 2).

5. The formula was reproduced from the AF-300 MSDS sheet. This formula (A) contained 300 grams per liter of 2,4-D acid, 235 grams of kerosene (or Solvent 400), and 50% by volume of Neodol 91-6. For the purposes of this experiment, the formula will be tested with only the surfactant and the 2,4-D acid. After addition of the Neodol 91-6 to a beaker, the solution was clear. After the addition of 2,4-D acid, the formulation became cloudy with chunks of 2,4-D technical dispersed. After 2 hours of stirring at ambient, there was still a substantial amount of undissolved 2,4-D acid in the sample. The sample sat undisturbed over a weekend (for approximately 66 hours). There was no evidence even after this time that the 2,4-D was any more dissolved than after 2 hours of agitation.

6. The formula from our Example 1 of the patent application was reproduced. It contained 85% of a C11 alcohol with 3 moles of ethylene oxide, and 15% 2,4-D acid. After the addition of the 2,4-D acid to the ethoxylated alcohol, the formulation became cloudy with chunks of 2,4-D technical dispersed. After 30 minutes of stirring at ambient temperature, the formulation was clear and the 2,4-D acid was fully solubolized.

7. Photos of the formulations are available upon request.

8. I hereby declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001

of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

01-23-06
Date

Johnnie R. Roberts

Curriculum Vitae

Johnnie Roberts

July 22, 2005

Current job title with Helena Chemical Company: Director of Product Development and Technical Services

Education: Bachelor of Arts Degree with a Major in Chemistry – University of Tennessee – Martin

Job experience: 30 years experience in the formulation and development of Pesticide and Spray Adjuvant Products

Professional certification: Certified Crop Consultant: (CCA) 2000 – 20005

Publications: Co-Author of 10 Scientific papers dealing with the formulation and/or application of pesticides and spray adjuvants

Inventor of Record for the following patents:

PAT. NO.	Title
6,831,038	Agricultural formulation
6,541,424	Manufacture and use of a herbicide formulation
RE37,313	Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability
6,232,272	Manufacture and use of herbicide chlorinated phenoxy formulation
5,906,961	Alkanolamide spreader-sticker surfactant combination
5,877,112	Agricultural formulation
5,741,502	Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability
5,725,630	Dry granular fertilizer blend and a method of fertilizing plants
5,580,567	Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability
5,393,791	Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability
5,234,919	Water soluble, highly active dimethoate formulations in an alcohol/ester solvent system
5,178,795	Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability